Application No. 09/845,216 Attorney's Docket No. 0119-060
Response to 09/22/2004 Action

Listing of Claims

1. (canceled)
2. (canceled)
3. (canceled)
4. (canceled)
5. (canceled)
6. (canceled)
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12. (canceled)
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14. (canceled)
15. (canceled)

16. (New) A matched filter for obtaining a correlation between a signal received through a multipath transmission line and a spreading code sequence, comprising:

N partial filters, each partial filter having a predetermined number m of taps, that are serially connected;

first adder means for adding outputs of enabled partial filters from among the N partial filters;

control means for dividing, based on a time width of effective paths included in the received signal, the spreading code sequence into subsequences, each subsequence having m*n chips, activating n partial filters from among the partial filters, wherein n satisfies $n*m*Ts \geq Td > (n-1)*m*Ts$, where Ts represents a sampling period of the received signal and Td represents a maximum delay time of the multipath signal, and detecting a partial correlation for each subsequence with the received signal by supplying the subsequences, in turn, to the n activated partial filters; and

second adder means for adding the partial correlations;

wherein N, m, and n are integers; $m \geq 2$; and $N \geq n \geq 1$.

17. (New) The matched filter of claim 16, wherein the effective paths included in the received signal are determined based upon reliability information such as signal-to-noise ratio and signal-to-interference ratio of the received signal.

18. (New) The matched filter of claim 16, wherein one of the effective paths is a path which is used to determine symbol timing of the received signal.

19. (New) A receiver for a mobile radio communication system that uses a matched filter according to claim 16.

20. (New) An arithmetic unit that operates as a matched filter according to claim 16.

21. (New) A method for obtaining a correlation between a signal received through a multipath transmission line and a spreading code sequence, comprising:

adding outputs of enabled partial filters from among N partial filters being serially connected, each partial filter having a predetermined number m of taps;

dividing, by a control means, the spreading code sequence into subsequences, each subsequence having m•n chips, based on a time width of effective paths included in the received signal;

activating n partial filters from among the partial filters, where n satisfies $n*m*Ts \geq Td > (n-1)*m*Ts$, where Ts represents a sampling period of the received signal and Td represents a maximum delay time of the multipath signal;

detecting partial correlations for each of the subsequences with the received signal; and

adding the partial correlations;

wherein N, m, and n are integers; $m \geq 2$; and $N \geq n \geq 1$.

22. (New) The method of claim 21, wherein the effective paths included in the received signal are determined based upon reliability information such as signal-to-noise ratio and signal-to-interference ratio of the received signal.

23. (New) The method of claim 21, wherein one of the effective paths is a path which is used to determine symbol timing of the received signal.